

# Comparisons of Job Characteristics

Focus Occupation: **Biomedical Engineers (17-2031)**

Associated Occupation: **Medical Scientists, Except Epidemiologists (19-1042)**

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 59

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Biology	3.7	19.8	21.2	0	Current knowledge level may be sufficient
English Language	11.2	17.4	16.5	0	Current knowledge level may be sufficient
Mathematics	9.2	17.2	20.2	>	Current knowledge level is likely sufficient
Chemistry	4.8	15.8	16.3	0	Current knowledge level may be sufficient
Medicine and Dentistry	3.7	15.6	14.4	0	Current knowledge level may be sufficient
Communications and Media	5.3	14.3	5.9	<<	Extensive education and/or training may be required
Administration and Management	8.4	12.9	8.3	<<	Extensive education and/or training may be required
Personnel and Human Resources	5.6	12.4	5.5	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 84

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Science	4.5	17.6	17.1	0	Current skill level may be sufficient
Reading Comprehension	10.7	17.2	16.9	0	Current skill level may be sufficient
Critical Thinking	10.8	16.2	16.2	0	Current skill level may be sufficient
Complex Problem Solving	9.1	14.6	15.1	0	Current skill level may be sufficient
Writing	9.2	13.9	12.7	0	Current skill level may be sufficient
Active Learning	8.7	13.4	13.8	0	Current skill level may be sufficient

Judgment and Decision Making	9.4	12.8	15.1	>	Skill level is likely sufficient
Monitoring	9.9	12.8	12.2	0	Current skill level may be sufficient
Systems Analysis	6.5	11.9	12.3	0	Current skill level may be sufficient
Systems Evaluation	6.4	11.7	12.2	0	Current skill level may be sufficient
Mathematics	6.2	11.3	14.2	>	Skill level is likely sufficient
Operations Analysis	5.0	10.0	14.6	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Abilities

Similarity of Focus Occupation to Associated Occupation: 94

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Oral Comprehension	12.5	18.8	16.1	<	Some improvement in abilities may be required
Inductive Reasoning	10.2	18.6	16.8	<	Some improvement in abilities may be required
Written Comprehension	11.0	18.3	16.6	<	Some improvement in abilities may be required
Oral Expression	12.4	17.5	15.3	<	Some improvement in abilities may be required
Problem Sensitivity	11.1	16.1	16.3	0	Current ability level may be sufficient
Deductive Reasoning	10.6	16.0	17.6	>	Current ability level is likely sufficient
Written Expression	9.8	14.9	13.9	0	Current ability level may be sufficient
Near Vision	11.1	14.4	13.9	0	Current ability level may be sufficient
Information Ordering	9.9	13.9	13.6	0	Current ability level may be sufficient
Category Flexibility	9.0	12.4	13.6	0	Current ability level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 77

Focus Occupation: Biomedical Engineers (17-2031)

Associated Occupation: Medical Scientists, Except Epidemiologists (19-1042)

Work Activities	Exclusivity of Activity
Advise clients or customers	19
Analyze scientific research data or investigative findings	27
Collect scientific or technical data	30
Communicate technical information	4
Confer with research personnel	50

Confer with scientists	54
Develop or maintain databases	30
Develop plans for programs or projects	31
Develop policies, procedures, methods, or standards	21
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Direct and coordinate scientific research or investigative studies	27
Explain complex mathematical information	30
Plan scientific research or investigative studies	48
Prepare reports	8
Prepare technical reports or related documentation	22
Use biological research techniques	68
Use computers to enter, access or retrieve data	3
Use government regulations	44
Use knowledge of investigation techniques	16
Use library or online Internet research techniques	21
Use mathematical or statistical methods to identify or analyze problems	30
Use project management techniques	47
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 68

**Focus Occupation: Biomedical Engineers (17-2031)**

**Associated Occupation: Medical Scientists, Except Epidemiologists (19-1042)**

Tools and Technologies	Exclusivity
Autoclave and sterilizer equipment and accessories	12
Chemical evaluation instruments and supplies	10
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Development software	4
Electrochemical measuring instruments and accessories	9
Fluid mechanics equipment	11
Histology equipment	35
Indicating and recording instruments	2
Industry specific software	1
Laboratory centrifuges and accessories	13

Laboratory enclosures and accessories	17
Laboratory incubating equipment	20
Laboratory washing and cleaning equipment	35
Medical computed tomography CT or CAT systems and related products	27
Medical magnetic resonance imaging MRI products	33
Medical positron emission tomography PET equipment and related products	56
Medical ultrasound and doppler and echo imaging products	19
Spectroscopic equipment	10
Tissue culture and high throughput screening supplies	31
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.